Upper Sacramento PWT
Wednesday, March 30, 2016
Red Bluff Fish and Wildlife Office, Red Bluff, CA
Start Time: 10:00 **End Time:** 16:00
Host Agency: California Department of Water Resources **Facilitator:** Mike Berry **Note Taker:** Laurie Early
Next Year's meeting host: U.S. Fish and Wildlife Service (Jim Smith Contact); Potential Date: 3/22/2017

*Technical difficulties with the phone – difficulties hearing the room

Round Robin Updates:

Mike Berry – CDWR

Jane Dolan – Sacramento River Forum

- Shorter name, same mission. Non-Profit focused on the Upper Sac River.
- Mission – Promote, Encourage and Develop programs to enhance and expand Sacramento River from Keswick to Verona.
- Programmatic Safe harbor agreement with USFWS. Work with landowners – 4500 acre rice ranch (Colusa County), reveg 0.5 mile habitat corridor for the refuge.
- 3 additional projects on large ranches with frontage on the Sac River.
- Working with counterpart state agencies and would like to develop this partnership further.
- Plan to work with the farmers and create some land stewardship agreements

Joe Silveira – U.S. Fish and Wildlife Service (USFWS), Sacramento River National Wildlife Refuge, Wildlife Biologist and Acting Assistant Wildlife Refuge Manager

- Currently 10,353 fee-title acres of floodplain along 81 miles of river below Red Bluff, and authorized for additional acreage but haven't purchased any land in 13 years due to lack of flooding and high commercial nut prices. Over 5,000 acres of floodplain habitats restored through numerous partnerships.
- TNC is restoring 85 acres of refuge floodplain at the Bogg's Bend Unit southeast of Princeton.
- The refuge and TNC restored 75 acres of floodplain native grasses/wildflowers at La Barranca Unit (near Red Bluff) and Sul Norte Unit (near Butte City) in 2014-15.
- The refuge and TNC are restoring 100 acres of floodplain native grasses/wildflowers at Pine Creek Unit (near Hamilton City) and Sul Norte Unit this season (2015-16); and prepping 115 acres of floodplain for native grasses/wildflowers at Rio Vista Unit (near Woodson Bridge) and McIntosh Landing South Unit (near Hamilton City) for 2017-18 seed drilling.

Laurie Earley – USFWS, Lassen National Forest Almanor Ranger District, Fish Biologist

Jim Smith – USFWS, Red Bluff FWO Project Leader

Amanda Cranford – NOAA Fisheries, Sacramento, permitting

Naseem Alston – NOAA Fisheries, Sacramento

- NOAA Fisheries is almost done completing 5-year status reviews for listed salmonids.

Robert Chase – USAOCE, Redding, presenting later

Chris Van Holmes – University of Washington, presenting later

Colin Purdy – CDFW, anadromous fisheries supervisor for region 2

- Stony Creek to Consumes River, monitoring of Butte Creek, Winter Run fish rescue,
- Near and long-term planning efforts in the Yola Bypass – planning for new notch in the Fremont weir, looking at timing for juveniles and survival, rearing potential.

- 3/29 – fish rescue and collected 100s
- First in-river 100% release for Spring-run Chinook (SCS) and small release of Fall-run Chinook (FCS) in-river release
- Observed a lot of pre-spawn mortality in Butte Creek in summer 2015

Bruce Oppenheim – NOAA fisheries, Sacramento, presenting later

Josh Israel – USBR, Bay Delta office, presenting later

Bill Poytress – USFWS, Red Bluff FWO, Sac River monitoring Program Manager, presenting later

- Newly published manuscripts in fall 2015 – Juvenile Lamprey, Sturgeon egg mats

Doug Killam – CDFW, Red Bluff, presenting later

Matt Brown – USFWS, Red Bluff FWO, Clear Creek and Battle Creek Program Manager

Battle Creek:

- Fish passage weir to prevent SCS from entering SF Battle Creek because of large amounts of fine sediment (2012 Ponderosa Fire) have sluffed off and entered the stream and 97% of the previous spawning locations had been degraded to sand
- Drought and high water temps in 2015 (5 degrees) led to poor spawning for SCS, however there appears to be good production from the fish that spawned
- CVWQCB has designated the creek a Priority watershed

Clear Creek:

- SCS juvenile monitoring showed that production was average even with poor temperatures
- Adult holding and spawning distribution was the worse than previously years and the upper watershed was warmer but the lower portion was cooler
- Hope to experiment with water releases from Whiskeytown Dam to increase temperatures in lower portion while maintaining temperature criteria in upper portion
- Hoping to see big returns in 2016 because the 2013 production estimates were among the highest observed
- Kayak surveys have found average numbers of Steelhead (STT) redds and crews continued work on the weir
- Clear Creek restoration related work - Juvenile habitat use study, Mercury studies, contracts for avian monitoring, herp (foothill yellow-legged frog and western pond turtle) surveys,

Stacey Alexander – CDFW, Redding, presenting later

Dylan Stompe – CDFW, Redding, presenting later

Taney Moore – NOAA Fisheries, Sacramento, flood and levee projects on American River

Josh Gruber – USFWS, Red Bluff FWO, Sac River monitoring

- 2015 – new quest to find green sturgeon in river and sampled July-Oct
    - Had more success than originally anticipated.
    - Collected 41 juveniles and habitat data.
    - Trying to find funding for in river habitat evaluations
- RST 2015 – collected 514 individuals, 19 juvenile sturgeon >100 mm and this is extremely different from previous years.

Jim Earley – USFWS, Red Bluff FWO, Battle and Clear Creek programs

Neal McIntosh – NOAA Fisheries, Sacramento

Travis Webster – USFWS, Anderson Field Office/Red Bluff FWO, Battle and Clear Creek programs

Matt Johnson – CDFW, Red Bluff, Upper Sac Tributary monitoring, presenting later

Ruth Goodfield – NOAA Fisheries, Sacramento, Fisheries Restoration

- New to the area, from the North Coast and has 20 years of experience as a restoration practitioner

Charlie Chamberlain– USBR, Redding, CVPIA
Diane Coulon – CDFW, Chico
Lindsay Wood – Independent Biologist, Butte Environmental Council
John Hannon – USBR, Sacramento, Presenting later

- Working on Above Shasta salmon reintroduction and hope that it is underway in 2017

Susannah Iltis – UW, modeler and has worked on Columbia, Presenting later
Ryan Cook – USFWS, Anderson Field Office/Red Bluff FWO
Sam Provins – USFWS, Anderson Field Office/Red Bluff FWO
Sarah Austing – USFWS, Red Bluff FWO, Hatchery Evaluation

- This summer HE will be conducting SCS surveys on lower Mill Creek
- Ongoing evaluations on unscreened Coleman diversion (Intake 2)
- Early releases of pre-smolt FCS, 600 Acoustic tagging and Bob Null can be contacted for more information
- Acoustic tagging STT

George Edwards – CDFW, Sacramento
Joe Pisciotto – CDFW, state wide responsivities
Farhat Bajjaliga – CDFW
Don Baldwin – CDFW, fisheries branch, presenting later
Todd Miller – USFWS, Lodi FWO, New to the area
Ryan Revneck – PSMFC Red Bluff
Jon Walsh – PG&E, Aquatic Biologist, Battle Creek Restoration Project
Jeremy Notch – NOAA Fisheries Santa Cruz,

- BLM Redding Field Office, Ecologist

Lucas RossMerz – Sacramento River Preservation Trust, Executive Director

- Working with the Park Service on the creation of a Blue Trail guide highlighting the recreation opportunities on the Sacramento River

Sarah Gallagher – USFWS, Red Bluff FWO, Clear and Battle Creek
Kendra Fallon – BLM, Redding

Presentations:

Bill Poytress – USFWS Red Bluff Diversion Dam Juvenile Monitoring Update

- Lots of press (NPR, NBC, and more)
    - Showed the NBC Bay Area clip – explained the RST process and explained how the data is used
    - Real-time data available, contact Josh or Bill if interested
- WCS trend data shows declining number of juveniles
- BY 2014 and 2015 production were the lowest since 1996
- FCS production was better in 2015 compared to 2014 and no trend
- LFCS has been very low for many years, and 2014 was not good and 2015 was worse
- SCS catch was low in 2014 but higher in 2015
- STT catch was below average in 2014 and in 2015 it was the lowest since 1995

- WCS egg-to-fry survival for 2014 (5.9%) and 2015 (4.5%) is very low and the worse observed since 1996.
    - 2014 – temp data suggested that it would be not good for LCS
    - 2015 – temp data suggested that it would be poor for LFCS, WCS, STT but not FCS, SCS
- Potential for disease impacts with the warmer water temperatures

Comments/Questions

Any way to determine the difference between non-clipped Coleman FCS and natural SCS?
The spawning temperatures would suggest that temperatures in 2015 would be bad for SCS but 2014 was likely worse. Late spawners in 2015 likely did better.
Jim Smith: Disease work that participated in, found large numbers of C. Shasta. Would like to expand upon that work.
Any idea on potential impact of survival when it comes to C. Shasta?
Higher rates of infection in the earlier sampled fish. Would like to collect fish throughout the whole season.
Colin Purdy: Feather – Similarly observed high number of C. Shasta infected fish.
Jim Smith: The risk increases as you move down river, Ball Ferry and Red Bluff, there wasn't a cold spot. The reason why we are so concerned C. Shasta (parasite) that infects salmonids, in this case Chinook. There is an intermediate host and then infects the fish. Been observed on the Klamath to be a reason for high mortality. Understanding where these zones are very important. Keep watching and determine ways to alleviate.
Colin Purdy: CDFW confirmed the presence of NZ mudsnails below the rim dams in the Feather and Yuba rivers. Trying to determine the population sizes on both rivers. Big concern because of the recreation on both rivers and trying to limit the transfer of these organisms to other areas in the Upper Sac. Basin.

Bruce Oppenheim: WCS Juvenile Production Estimate Improvements

- WCS project work team meets monthly and there is a sub-group that meets to determine the JPE downstream of Red Bluff.
- The sub-group met 4 times in 2015 and made some changes on how the estimation is calculate (see presentation for all the information).
    - The team advised that the estimate from Red Bluff Diversion Dam be used, update survival estimates, update the survival rate (RBDD and Tower Bridge) and update the survival for hatchery fish.
    - Independent science review looked at the JPE and provided recommendations (report JPE by alternative methods, make separate estimates w/CI, develop better estimates for S1 (egg to RBDD), commit funding for estimate approval, explore the trickle release strategy with proportional hazards model (from Columbia River)).
        - 1st improvement: eliminated the number of redds below the compliance point and will use RBDD RST production. Using the egg-to-fry survival in realtime
        - 2nd improvement: Account for unknown survival b/w fry-smolt
        - 3rd improvement: Using acoustic tag data in real time (S2 = 0.42)
        - 4th improvement: Improve hatchery survival (Caldwell Park-Delta) and it is different from the S2 because of the difference between wild and hatchery fish
- NMFS Letter to USBR – NMFS adopted changes, continue acoustic tagging, and will provide funding for improving JPE.

- Wild WCS to the Delta, very low numbers of fish. 2015 lowest since 1995. On average it should be >800,000, 2015 first year the number of hatchery fish was greater than wild.
- JPE vs. Adults – no correlation between the number of fish produced and the number of returns 3 years later.
- Advice for the WRPWT – release acoustic tagged smaller size fish earlier in the year, use parentage based method for spawning ground surveys.
- Continued efforts in 2016 – analysis historical data, develop a new model, and more tagging data. All the formulas and calculations

Comments/Questions

Mike: Bill presented fish survival from Keswick-RBDD and how is that incorporated? Now using real time data (95%) of the production.

Doug: How many times have the fish facilities exceed their take for WCS? 1 time in 2000, and currently there is genetic testing so determining the run of the fish is more accurate.

Robert Chase: Updates from ACOE

- Expanding the Army Corp. Redding office and Matt Kelly is extremely busy so include Robert on anything with fish restoration
    - Hired an intern
- Robert will likely be the Restoration Coordinator for the Upper Sac. and if you have any questions contact him
- Legal counsel – coffer dams are considered fill and will need a permit and will forward the legal definition.
- Sac District re-working the EFH and will share with NOAA fisheries
- Nationwide permit series being updated for 2017 and will likely be some changes
    - Possibility of no more non-notifying PCNS, therefore will likely have to contact and complete the pre-construction notification process
        - A lot of applications for projects with a secondary goal for fisheries and should be submitted under the right category
        - LOP (more of a Categorical-Exclusion permit) and it covers 5 years, with an extension for 5 more years
            - Salmon issue – success criteria for restoration projects? Now looking to establish set criteria so it can be determined if the project will be a success
    - Restoration Projects – mitigation required?
    - Dredge tailings – Court case from AK: Tailings can be put into a separate water source. California is now allowing suction dredging statewide. Trying to determine Federal agency jurisdiction. There will be coordination with other agencies to determine the regional permit once a lead agency has been designated more than likely ACOE.

Matt Johnson: 2015 Clear, Mill, Deer, Antelope Creek Updates

- Tributary Updates
    - Antelope Creek:
        - 5 SCS on video, 0 SCS in snorkel
        - 6 FCS (nothing above rm 4)
        - 42 winter-entry STT and 3 fall-entry STT

    - Deer Creek:
        - 268 on video (rm 5), 99 SCS snorkel (likely pre-spawn mortality) and could be the lowest spawning population on record
        - 612 FCS
        - 193 winter-entry STT and 8 fall-entry STT
    - Mill Creek:
        - 127 SCS on video, 116 in redd survey
        - 1,033 FCS
        - 44 winter-entry STT and 56 fall-entry STT
    - Clear Creek:
        - Video station installed in 2011 and it was updated with a flashboard weir.
        - FCS (Aug 15-Dec15) 8,809 FCS
            - Historically FCS was estimated with a carcass survey, in 2015 the estimate would be 7,631. Typically 1,000 more fish observed by video
        - 148 STT
    - Bio-sample numbers:
        - Percentage of FCS hatchery: Clear – 74%, Mill – 53%, Deer – 100%
        - Majority of the hatchery returns were released in the delta (trucked)
        - Clear Creek: There has been a steady increase in the number of hatchery FCS observed
- Drought 2015
    - Mill there was cooperation for minimum flows
        - Proposed to the SWRCB that 50 cfs was a minimum that was needed for fish migration because based on historic migration patterns and diversions >50% would be able to make it up
    - Antelope and Deer there was no cooperation so SWRCB issued a curtailment
        - Proposed 50 cfs and it would have blocked > 90% of this fish
- Fish Passage
    - Ward Dam (Mill Deer) completed in the fall 2015
    - Lower Deer Creek Fall fish ladder improvement will be completed fall 2016
    - Upper ladder (Mill Creek) 95% designs but need funding summer 2017
    - DCIC dam (Deer Creek) upper-most diversion on Deer and no ladder – designs are completed but need funding, DWR designed a temp ladder
    - Antelope Creek diversion fix, there was screens but no juvenile bypass. IN 1970's CDFW said that the department would seine fish out. Mike Berry developed a plan and SWRCB will be funding the project

Doug Killam: 2015 Upper Sacramento River and Tributary Results

- Sac River LFCS (spawned 14-15): 2,159 (99% natural origin) only recovered 1 Coleman CWT which is typical
- Sac River WCS: 3,439 (including hatchery fish – 78% natural origin), recovered 161 CWT all WCS
- Sac River FCS: 28,664 (70% hatchery origin), recovered 151 CWT (Feather – 135, CNFH – 16)
- Cow Creek FCS: 591 (67% hatchery origin)
- Cottonwood Creek FCSL 604

- Beegum Creek SCS: 0 and 0 in NF Cottonwood, pools are still very silted
- Battle Creek FCS: 19,355
- For all populations very few jacks were observed
- Upper Sac 8% of FCS observed were jacks and about average for LFCS and lower for SCS and WCS
    - Compared to 18% Feather and 26% American

John Hannon, USBR, Update on Juvenile Rearing habitat in the Sacramento River

- Restoration in the Keswick to Red Bluff area with CVPIA funding
    - Main objective is for fish habitat with a secondary goal to involve other user groups
    - Goal – increase productivity in the Upper Sacramento River (Keswick-Red Bluff = 58 miles)
- Upper river projects are focused on spawning gravel and middle portion is both spawning and rearing and the furthest downstream projects are focused on side-channel rearing
    - Gravel Augmentation
        - Market Street (completed Winter 2016)
    - Side-channel construction (rearing habitat)
        - Turtle Bay – adding several potential channels
        - Rancherie Island (2016 planned)
        - Rancho Briesgau
        - Lake California
        - Rio Vista
        - East Sand Slough
    - Side-channel construction and gravel
        - Tobiasson Island
        - Shea/Girvan
    - Side-channel, gravel, and bank rearing habitat
        - North Cypress Street Bridge (2016 ready for construction)
        - South Cypress
    - Side-channel, gravel, and floodplain
        - Kapusta
        - Kapusta 1a (2016 ready for construction)
    - Side-channel and floodplain complex
        - Anderson River Park (2016 construction planned)
    - Pond Connectivity and structure addition
        - Kutras Pond
- Effectiveness monitoring – habitat use, growth, food availability
- GCID donated their time to complete the construction work this winter and we are very thankful
- Numerous permits, Adaptive Management and Structured Decision Making are ongoing

Comments/Questions

Jim Smith: How are projects being prioritized? Answer: Types of projects are now being prioritized in the CVPIA SIT process. The project technical work group has been meeting regularly to identify specific project sites, priorities, site specific designs, permitting, and monitoring.

Jeremy Notch: Survival and Movement and Rates of Wild Chinook Smolts from Mill Creek 2013-2015

- SCS habitat has been greatly reduced
- Objectives
    - Survival rates of smolts (~80 mm) from Mill Creek
    - Movement rates
- SCS Mill Creek smolts have a bi-modal migration pattern
- Last three years – smolt collection (RST, fyke net, side-channel seining)
    - >80 mm or 6g will be tagged
    - 2013 and 2014 – released the fish 30 min after surgery
    - 2015 – fish were released at night
    - Tagged ’13: 59, ’14: 36, ’15: 186
    - Genetics were collected and a large portion of these fish were Central Valley fall run
- New receivers (tributary series) and covered 20 km
- Broken out into four reaches
    - Mill Creek
    - Upper Sac
    - Lower Sac
    - Delta/SF Bay
- In 2013, 2014, 2015 low survival within the Mill Creek reach (60% made it to confluence in 2015)
- Survival fairly good in the Upper Sac (20% made it to Butte City)
- Survival drops in the lower reach and only 1 fish made it to the bay in 2015
- Speed and survival are positively correlated (increase in speed, increase in survival)
- Drought challenges – low flows and high temps, increase predator densities, increased metabolism
- Conclusion and future direction
    - Low survival in Mill Creek
    - Movement highly correlated with survival
    - Mobile tag study location mortality hot spots
    - Tag effect study – tag mortality, screw-trapping
    - Predator surveys

Comments/Questions

Jim Smith: Different conditions this year – hoping that will be helpful.

Colin Purdy: Middle Sacramento River Monitoring Update

- Knights Landing and Tisdale Weir monitoring is needed for real-time data for CVP/SWP operations
    - Daily data summaries, bi-weekly catch summaries
- Long-term monitoring at both locations
    - Moulton Weir (rm 159) RST installed July 2010, removed June 2011
    - Tisdale Weir (rm 120) RST installed July 2010

    - Knights landing (rm 88) Installed 1995
- Hydrograph of the middle river
    - Summer time - impacts of diversions
    - Early winter is a more flashy hydrograph because there are no releases out of Shasta,
    - Late winter there are releases so the duration of high flows is often longer
- Condition dependent sampling has been established because of the potential for debris loading and implemented ½ cone sampling
- Trap efficiency trails – no relationship with flow or size class
- Adopted the CAMP database
    - Acoustic tag WCS releases (n=561)50% survival from release to Tisdale
    - 35% survival from release to Knights Landing
- The acoustic data is helpful for understanding what is happening in the middle river
    - Hatchery release are an opportunity for mark-recapture study.

Don Baldwin: Update on Central Valley Steelhead Monitoring Program

- Broken into 3 phases
    - 1: 6/2015-3/2017 – Implementation in mainstem and selected tributaries
    - 2: Implementation on the remaining tributaries
    - 3: Implementation on the San Joaquin
- Monitoring Program includes:
    - Mainstem mark-recapture program
    - Upper Sac river tributary escapement program
    - PIT tagging
- Mark- Recapture Program
    - Objective – Estimate total annual CV steelhead adult escapement through mark-recapture
    - Sac River downstream of American and upstream of Clarksburg, CA
    - Sampling with fyke traps (modified Hallock trap) and mark with floy-tags, PIT tags
    - Sampling Aug-May 7 d/wk (temp threshold of ≤ 72 °F)
    - Challenges –High flows and debris
    - First year of sampling
        - 49 STT (4 wild, 45 hatchery)
        - Based on size likely Nimbus hatchery fish
        - 1st capture 12/12/2015
        - Floy tagged, PIT tagged, genetic sampled
        - By-catch
- Tributary Escapement Monitoring
    - Estimate total escapement of CV steelhead to Sac River tributaries using counting devices and resistant board weirs
    - Phase 1: Clear, Bear; , Mill, and Antelope creeks
    - Phase 2: Deer, Cow, Butte, and Cottonwood creeks
- Sacramento River and Tributary Mark-Recapture
    - Estimate recapture rate and period of CV steelhead in select tributaries
    - Phase 1 – Clear, Mill, Deer, Battle creeks and Yuba River

    - Phase 2 – Butte, Antelope, Cottonwood, Cow, Big Chico, Payne, Thomas creeks, and Feather, American rivers
    - Phase 3 – San Joaquin River and tributaries
    - Flat Plate (swim-by) PIT Antenna designs
- Hatchery broodstock sampling
    - PIT tag antenna at hatcheries
    - Hand help PIT tag scanners during spawning
- Angler Harvest surveys
    - Scan harvested Steelhead with hand help PIT tag scanners
    - Observe for Floy tags

Doug Killam: CDFW Recent activities

- North Fork Battle Creek Barrier Assessments
    - Two natural barriers, 1 below and 1 above Eagle Canyon Dam
    - With drought money they are developing plans to provide passage about the barriers
        - All potentials are on the table
        - Hopefully there will be a plan by the end of this year, then will need funding
- Winter-run Reintroduction Plan
    - Overall goal is to have a plan completed by 2017 and subsequent contract for implementation
- Painter's riffle on the Sacramento River by Redding
    - Below Turtle Bay and filled in with gravel
    - Construction of a side-channel completed fall 2016 for rearing and spawning
- Monitoring USBR restoration work
    - Side-channel habitat use
- Other items
    - Shasta is at 400,000 acre feet
    - Gravel pile at Keswick
    - Camera at ACID
    - Market Street gravel augmentation
        - Upstream gravel washed out after the 20,000 cfs flow but some gravel remains
        - Expected to see some WCS spawning

Josh Israel, Chris Van Holmes, Susannah Iltis: New Project on Sacramento River w/UW

- SacPAS – Salmonid Passage and Assessment
- Came out of the drought contingency Biological Monitoring Plan
    - University of Washington's Columbia Basin Research group developed the Columbia River Real Time Data
        - Support hydro-system, fishery, management and research data
        - Aiming to use the model in 201 for preseason forecasts
        - Available to agencies and public
        - Incorporate RPAS
    - Three main components
    - Component 1 – Database

        - Goal: integrate and aggregate data from primary sources
            - Identify the needs for management and research issues
            - Integrate on time and location, flows, fish passage, turbidities
            - Filter database for quality control
            - Establish feedback loops
        - SacPAS data
            - Assimilated and online: CDEC hydro system data, RB juvenile monitoring, beach seine and trawls
            - Assimilated but not online: CWT recoveries, RB adult passage, red counts
            - Still data desired: screw traps, RB adult run assignments, Adult escapement , hatchery data, Shasta temp profile
            - Would love the data
            - Using data to look egg emergence, trends, to forecasts, and risk assessments
    - Component 2 – Web-based Analysis Tool
        - Provide publicly accessible web-based reporting and analysis tools
            - Development web-based reporting for river environment and juvenile sampling
            - Operational alerts for weirs
            - Develop RPA-based water temperature analysis tool
            - Establish feedback loops to improve
        - www.cbr.washington.edu/sacramento
            - Temperature analysis, weir overtopping, juvenile fork lengths, migration timing (passage dates),
            - Outputs - Tabular, graphics, statistical summary tables
                - Various outputs that Chris and Susan would like all users to explore and provide feedback
                - Can upload your own raw data so it can be incorporated with the other datasets and will not be stored on the website
    - Component 3 – Modeling
        - See the fish downstream from Keswick to the Delta
        - COMPASS Smolt Migration Model
        - Current model is under construction and hope to complete the model and documentation by 2017
    - Taking suggestions, comments and want to get to a Proof-of-concept by 2017
    - More things to come

Comments/Questions:

Matt: What rotary-screw trap data is wanted? This model is currently focused on WCS and other models can be included if there is a need to develop.

Colin: Although it's focused on the WCS it is really hard to detect SCS and it would be great to incorporate smolts moving down river even if they can't be detected? The fish data is focused on WCS but all the data services can be used for any run.

**Request that an email if you are looking for particular data, grandtab, finer grain timescale, number of fish released and where

Dylan Stompe: Dewatered Redd Monitoring Upper Sacramento River

- Redd Dewatering Surveys 2015-2016
    - Objective:
        - 1) provide managers with real-time data in an effort to reduce the number of impacted redds;
        - 2) count the number of redds dewatered
    - Redding to Tehama
    - Surveyed the river (boat and wading) and marked shallow redds with Trimble
        - All WCS and SCS redds marked
        - Measured at shallowest point on the tailspill
        - Collected waypoint
    - Revisted redd after flow reductions
        - All WCS remained inundated
        - 1 SCS red dewatered
        - 278 FCS dewatered
        - FCS dewatering rate of 2.05%
- Most significant flow decrease for redd dewatering was 4250 to 3250
- Majority of the redds dewatered were upstream of Clear Creek

Stacey Alexander: Water Quality Monitoring in the Upper Sacramento River

- Water Quality monitoring 2015
    - Collected Min, max, average temp and DO
    - Keswick – Bonnyview Bridge
    - Temperature loggers placed throughout the study location
        - Daily average temp >56 one day at the upper most site and the max temp was >57 many times at the lower location
        - Prolonged exposure could be detrimental but unsure how the temp played into survival
    - Dissolved Oxygen Meter were placed adjacent to the redds
        - Inconsistent patterns between sites
        - Potential to be impacted by sediment

Comments/Questions:

Barometric pressure? No

Any idea on how many redds were dewatered if you were using the pit as an indicator? No

Loss of juvenile production based on the red dewatering? Potential estimate was 400,000 assuming that there was 100% mortality.

Where you able to observe all redds? Potential that not all redds were observed and the number dewatered is underestimate.

Next meeting March 22, Host USFWS contact Jim Smith.